Biodiversity Data Journal 13: e147753
doi: 10.3897/BDJ.13.e147753

Data Paper

Avifauna of the El Pambilar Wildlife Refuge in Ecuador

Edith Montalvo[‡,§], Javier Pianchiche[|], Alex Garofalo[|], José Bonilla[|], Freddy Gallo-Viracocha[¶,§], Luis D Montalvo[‡,#]

‡ Laboratorio de Ornitología, Departamento de Biología, Escuela Politécnica Nacional, Quito, Ecuador
§ Programa de Conservación de Cóndor Andino, Quito, Ecuador
| Oficina Técnica, Refugio de Vida Silvestre el Pambilar, Ministerio del Ambiente, Agua y Transición Ecológica, Las Golondrinas, Ecuador
¶ Fundación Ecología Neotropical, Quito, Ecuador
# Universidad de Florida, Gainesville, United States of America

Corresponding author: Edith Montalvo (edith-montalvoe@hotmail.com)

Academic editor: Caio J. Carlos

Received: 23 Jan 2025 | Accepted: 10 Apr 2025 | Published: 29 Apr 2025

Citation: Montalvo E, Pianchiche J, Garofalo A, Bonilla J, Gallo-Viracocha F, Montalvo L (2025) Avifauna of the El Pambilar Wildlife Refuge in Ecuador. Biodiversity Data Journal 13: e147753.
https://doi.org/10.3897/BDJ.13.e147753

Abstract

Background

The Pambilar Wildlife Refuge (RVSP) is a well-preserved forest on the northern coast of Ecuador and an important refuge for birds, particularly for species with distributions restricted to the Chocó. Data were collected over 83 days from 7 October 2013 to 28 August 2019. This dataset contains 3,638 records, representing 116 orders, 39 families, 120 genera and 158 species.

New information

This dataset represents the first article published on the avifauna of the El Pambilar Wildlife Refuge (RVSP) including information collected from 2013 to 2019. It includes taxonomic data collected over several years, as well as detailed information on the

© Montalvo E et al. This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

location, sampling effort and dates of the surveys. All data are available at the Global Biodiversity Information Facility (GBIF).

Keywords

El Pambilar Wildlife Refuge, tropical forest, avifauna, dataset

Introduction

The Chocó-Darién ecoregion has been internationally recognised as one of the areas with the greatest biodiversity on the Planet. This ecoregion covers northwest South America and mainly includes the humid tropical and montane forests of eastern Panama, the Pacific slope of Colombia and northwest Ecuador (WWF Colombia 2008). In particular, in the Ecuadorian Chocó, there are approximately 10,000 species of vascular plants, which represents around 25% of the flora recorded in Ecuador. Between 13% and 20% of these species are endemic, highlighting the uniqueness and fragility of this ecosystem (Vázquez et al. 2005).

The Chocó Region is notable not only for its biodiversity, but also for its high endemism, with a total of 257 endemic species having been identified, including 162 plants and 95 species of fauna, amongst which are 57 species of amphibians, 18 of reptiles and 20 of birds (Bonilla and Valoyes 2020a, Bonilla and Valoyes 2020b).

Despite its immense biological and cultural importance, the Chocó-Darién ecoregional complex faces significant threats. Since the second half of the 20th century, natural landscapes have undergone an accelerated transformation, mainly due to the conversion of forest into grasslands or land destined for crops (WWF Colombia 2008). These changes are driven by the expansion of the road network and economic integration processes, both nationally and transnationally, which have resulted in the loss and fragmentation of habitats. In Ecuador, the pressures from logging companies in search of new production areas are especially concerning.

The Ecuadorian Chocó, recognised globally for its biodiversity and high rates of endemism, faces serious threats, mainly due to deforestation caused by activities such as logging, agricultural expansion, land-use conversion and mining (Palacios and Jaramillo 2016, Conservation International 2019). In 1970, more than 80% of the region was covered by forest. However, in recent decades, the growing demand for wood products and land conversion into African palm and shrimp farms, have caused the loss of about 85% of the original forest cover (Sierra et al. 2003).

The RVSP is located in the Province of Esmeraldas, in northwest Ecuador (Fig. 1). It covers an area of 3,123 hectares and ranges between 200 and 360 m above sea level (Ministerio del Ambiente 2011). The RVSP aims to contribute to the conservation of the tropical humid forests in the Chocó Region. Notable for its high humidity and exceptional

biodiversity, the RVSP stands out as a key area for conservation of biodiversity (Ministerio del Ambiente 2011).

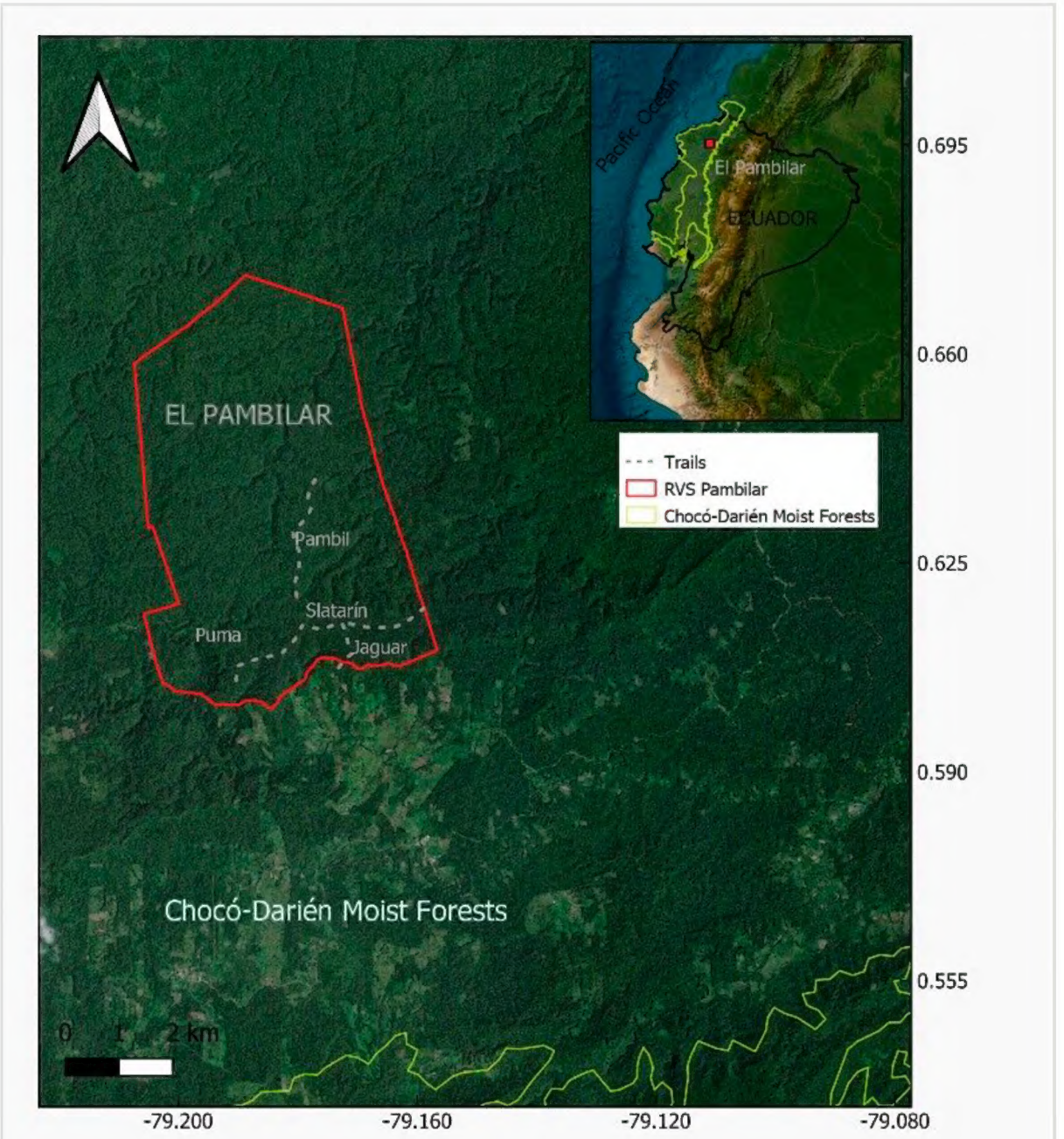

Figure 1. doi

Location of El Pambilar Wildlife Refuge (RVS Pambilar) in Ecuador (top right, red star) and its boundaries (red polygon). The refuge is situated within the Chocó-Darién Moist Forests region (yellow polygon). The four trails surveyed within the RVS Pambilar are marked with dotted lines: Puma, Pambil, Saltarin, and Jaguar.

Given the threats and exceptional diversity of the Chóco-Darién, it is important to implement conservation measures to protect these ecosystems and ensure the survival of their unique biodiversity.

Sampling methods

Sampling description: The data were obtained from observations carried out over 87 days by Javier Pianchiche (JP), Alex Garofalo (AG) and José Bonilla (JB), park rangers of

the El Pambilar Wildlife Refuge (RVSP). These records were complemented by Edith Montalvo (EM), researcher at the National Polytechnic School and Luis Daniel Montalvo (LDM), researcher at the University of Florida.

Each census consisted of observations conducted along the trails in the early morning or late afternoon under favourable weather conditions. Each census lasted between two and three days and was repeated on subsequent dates. Observations were made using Zeiss 8 x 40 or Bushnell 8 x 30 binoculars. The Xeno-canto website was used for identifying and comparing bird songs.

Data collection was carried out using a combination of methods and observers, including mist netting, transect surveys and point counts. The RVSP features four trails: Pambil, Puma, Saltarín and Jaguar, each approximately 2 km in length. On the Jaguar trail, 10 mist nets (12 m x 3 m) were deployed for six days, while transects were established along the Pambil, Puma and Saltarín trails and surveyed over a period of 83 days.

The data were collected from 7 October 2013 to 28 August 2019, as detailed below:

Park Rangers JP, AG and JB conducted audiovisual recordings on the Puma, Pambil and Saltarín trails from 6:00 a.m. to 11:00 a.m. on the following dates:

- 2013, sampling occurred over 8 days. The observation dates were 7, 17 and 28 October; and 8, 18, 19 and 27 November as well as 6 December.
- 2017, observations took place over 21 days on the following dates: 20, 21, 26, 27, 28 and 29 September; 3, 4, 24 and 25 October; and 7, 8, 14, 15, 16 and 17 November ; as well as 12, 13, 14, 15 and 16 December.
- 2018, there were 27 sampling days on the following dates: 17, 29 and 30 May; 13, 14, 19 and 20 June; 12, 24, 25 and 30 July; 28 August; 1, 12, 13 and 21 September; and 1, 10, 16, 17, 24 and 25 October; additionally, on 10, 13, 14, 15 and 28 .
- 2019, observations occurred over 19 days on the following dates: 16, 17, 19, 29 and 30 January; 19 and 26 February; 26 and 27 March; 16 and 24 April; and 21, 22, 23, 25 and 26 May; as well as 10 and 17 July and 28 August.

Audiovisual recordings by LDM were conducted along the Jaguar and Pambilar trails between 6:00 a.m. and 1:00 p.m. on 28 and 29 July 2016, 2 and 3 August 2017 and 17 and 18 April 2018. Mist net captures performed by EM took place on 1, 2, 3 and 4 August 2017, as well as 17 and 18 April 2018, from 6:00 a.m. to 6:00 p.m.

A Canon EOS 90D DSLR camera was used to photograph birds and their habitats. The identification and classification of the species were carried out using the "Field Guides to Birds of Ecuador" by Ridgely and Greenfield (2001) and Freile and Restall (2018). The final dataset was organised in the Darwin Core format and uploaded to GBIF upon completion of data collection.

Geographic coverage

Description: The RVSP covers an area of 31.22 km² (Ministerio del Ambiente 2017). Data collection was carried out on one-third of the total area of RSVP, using trails ranging in length from 1.5 km on the Jaguar to 2.5 km on the Pambil Trail. The habitat corresponds to Evergreen Forest ecosystem of the Equatorial Chocó Lowlands (Ministerio del Ambiente 2012). Data were collected covering all habitats of the Reserve, including the Tropical Lowland Evergreen Forest, the Floodplain Tropical Evergreen Forest, the River Edge Forest and the Montane Forest Evergreen (Stotz et al. 1996).

Coordinates: 0.607312 and -79.174986 Latitude; -79.174951 and 0.640864 Longitude.

Taxonomic coverage

Description: The RVSP, one of the few well-preserved forest remnants found on the northern coast of Ecuador, is an important habitat for birds, especially for the species with distributions restricted to the Chocó. This dataset includes 3,638 records from 16 orders, 39 families, 120 genera and 158 species (Table 1). The nomenclature follows the South American Classification Committee (SACC) (Remsen et al. 2024).

Table 1.

Bird List for El Pambilar Wildlife Refuge.

Rank	Order	Family	Scientific name	The number of individual birds observed
1	Tinamiformes	Tinamidae	*Tinamus major* (Gmelin, 1789)	64
2	Tinamiformes	Tinamidae	*Crypturellus berlepschi* (Rothschild, 1897)	21
3	Tinamiformes	Tinamidae	*Crypturellus soui* (Hermann, 1783)	2
4	Galliformes	Cracidae	*Penelope ortoni* Salvin, 1874	2
5	Galliformes	Cracidae	*Penelope purpurascens* Wagler, 1830	32
6	Galliformes	Odontophoridae	*Odontophorus erythrops* Gould, 1859	27
7	Galliformes	Odontophoridae	*Rhynchortyx cinctus* (Salvin, 1876)	22
8	Cathartiformes	Cathartidae	*Sarcoramphus papa* (Linnaeus, 1758)	1
9	Accipitriformes	Accipitridae	*Leptodon cayanensis* (Latham, 1790)	1
10	Accipitriformes	Accipitridae	*Elanoides forficatus* (Linnaeus, 1758)	3
11	Accipitriformes	Accipitridae	*Spizaetus ornatus* (Daudin, 1800)	2
12	Accipitriformes	Accipitridae	*Harpagus bidentatus* (Latham, 1790)	1

Rank	Order	Family	Scientific name	The number of individual birds observed
13	Accipitriformes	Accipitridae	*Accipiter bicolor* (Vieillot, 1817)	3
14	Accipitriformes	Accipitridae	*Cryptoleucopteryx plumbea* Salvin, 1872	14
15	Accipitriformes	Accipitridae	*Buteogallus urubitinga* (Gmelin, JF, 1788)	3
16	Gruiformes	Rallidae	*Laterallus albigularis* (Lawrence, 1861)	4
17	Columbiformes	Columbidae	*Patagioenas subvinacea* Lawrence, 1868	57
18	Columbiformes	Columbidae	*Patagioenas goodsoni* (Hartert, E, 1902)	101
19	Columbiformes	Columbidae	*Geotrygon montana* (Linnaeus, 1758)	1
20	Strigiformes	Strigidae	*Megascops guatemalae* Sharpe, 1875	2
21	Strigiformes	Strigidae	*Lophostrix cristata* (Daudin, 1800)	1
22	Strigiformes	Strigidae	*Pulsatrix perspicillata* (Latham, 1790)	3
23	Strigiformes	Strigidae	*Strix virgata* Cassin, 1849	3
24	Strigiformes	Strigidae	*Strix nigrolineata* Sclater,PL, 1859	1
25	Caprimulgiformes	Caprimulgidae	*Nyctiphrynus rosenbergi* (Hartert, 1895)	2
26	Apodiformes	Trochilidae	*Eutoxeres aquila* (Bourcier, 1847)	3
27	Apodiformes	Trochilidae	*Threnetes ruckeri* (Bourcier, 1847)	3
28	Apodiformes	Trochilidae	*Phaethornis yaruqui* (Bourcier, 1851)	32
29	Apodiformes	Trochilidae	*Phaethornis guy* (Lesson, 1833)	1
30	Apodiformes	Trochilidae	*Androdon aequatorialis* Gould, 1863	6
31	Apodiformes	Trochilidae	*Thalurania colombica* Bourcier, 1843	3
32	Apodiformes	Trochilidae	*Amazilia rosenbergi* (Boucard, 1895)	3
33	Apodiformes	Trochilidae	*Chlorestes julie* (Bourcier, 1842)	3
34	Trogoniformes	Trogonidae	*Trogon massena* Gould, 1838	1
35	Trogoniformes	Trogonidae	*Trogon comptus* Zimmer, 1948	4
36	Trogoniformes	Trogonidae	*Trogon chionurus* Sclater, PL & Salvin, 1871	35
37	Trogoniformes	Trogonidae	*Trogon caligatus* Gould, 1838	1
38	Trogoniformes	Trogonidae	*Trogon rufus* Gmelin, 1788	4
39	Trogoniformes	Trogonidae	*Trogon collaris* Vieillot, 1817	10
40	Coraciiformes	Momotidae	*Electron platyrhynchum* (Leadbeater, 1829)	7

Rank	Order	Family	Scientific name	The number of individual birds observed
41	Coraciiformes	Momotidae	*Baryphthengus martii* (Spix, 1824)	89
42	Galbuliformes	Galbulidae	*Jacamerops aureus* (Statius Muller, 1776)	10
43	Galbuliformes	Bucconidae	*Notharchus hyperrhynchus* Sclater, PL, 1856	1
44	Galbuliformes	Bucconidae	*Malacoptila panamensis* Lafresnaye, 1847	47
45	Piciformes	Capitonidae	*Capito quinticolor* Elliot, 1865	1
46	Piciformes	Capitonidae	*Eubucco bourcierii* (Lafresnaye, 1845)	1
47	Piciformes	Ramphastidae	*Ramphastos ambiguus* Swainson, 1823	131
48	Piciformes	Ramphastidae	*Ramphastos brevis* Meyer de Schauensee, 1945	74
49	Piciformes	Ramphastidae	*Pteroglossus torquatus* Gmelin, JF, 1788	21
50	Piciformes	Picidae	*Melanerpes pucherani* (Malherbe, 1849)	7
51	Piciformes	Picidae	*Veniliornis kirkii* (Malherbe, 1845)	4
52	Piciformes	Picidae	*Veniliornis callonotus* (Waterhouse, 1841)	6
53	Piciformes	Picidae	*Piculus litae* (Rothschild, 1901)	1
54	Piciformes	Picidae	*Dryocopus lineatus* (Linnaeus, 1766)	8
55	Piciformes	Picidae	*Campephilus haematogaster* (Tschudi, 1844)	2
56	Piciformes	Picidae	*Campephilus gayaquilensis* (Lesson, 1845)	32
57	Falconiformes	Falconidae	*Herpetotheres cachinnans* (Linnaeus, 1758)	8
58	Falconiformes	Falconidae	*Micrastur ruficollis* (Vieillot, 1817)	3
59	Falconiformes	Falconidae	*Micrastur plumbeus* Sclater, WL, 1918	2
60	Falconiformes	Falconidae	*Micrastur semitorquatus* (Vieillot, 1817)	5
61	Psittaciformes	Psittacidae	*Pyrilia pulchra* Berlepsch, 1897	43
62	Psittaciformes	Psittacidae	*Pionus menstruus* (Linnaeus, 1766)	37
63	Psittaciformes	Psittacidae	*Pionus chalcopterus* (Fraser, 1841)	6
64	Psittaciformes	Psittacidae	*Amazona autumnalis* (Linnaeus, 1758)	14
65	Psittaciformes	Psittacidae	*Amazona farinosa* (Boddaert, 1783)	233

Rank	Order	Family	Scientific name	The number of individual birds observed
66	Psittaciformes	Psittacidae	*Pyrrhura melanura* (Spix, 1824)	1
67	Passeriformes	Thamnophilidae	*Dysithamnus puncticeps* Salvin, 1866	20
68	Passeriformes	Thamnophilidae	*Epinecrophylla fulviventris* Lawrence, 1862	3
69	Passeriformes	Thamnophilidae	*Myrmotherula ignota* Griscom, 1929	5
70	Passeriformes	Thamnophilidae	*Myrmotherula pacifica* Hellmayr, 1911	1
71	Passeriformes	Thamnophilidae	*Myrmotherula axillaris* (Vieillot, 1817)	83
72	Passeriformes	Thamnophilidae	*Microrhopias quixensis* (Cornalia, 1849)	1
73	Passeriformes	Thamnophilidae	*Cercomacroides tyrannina* Sclater, PL, 1855	3
74	Passeriformes	Thamnophilidae	*Myrmeciza exsul* Sclater, PL, 1859	185
75	Passeriformes	Thamnophilidae	*Myrmeciza berlepschi* (Hartert, 1898)	11
76	Passeriformes	Thamnophilidae	*Hafferia zeledoni* Ridgway, 1909	3
77	Passeriformes	Thamnophilidae	*Gymnopithys leucaspis* (Sclater, PL, 1855)	47
78	Passeriformes	Thamnophilidae	*Hylophylax naevioides* (Lafresnaye, 1847)	60
79	Passeriformes	Thamnophilidae	*Phaenostictus mcleannani* (Lawrence, 1860)	20
80	Passeriformes	Conopophagidae	*Pittasoma rufopileatum* Hartert, 1901	9
81	Passeriformes	Grallariidae	*Grallaria guatimalensis* Prévost & Des Murs, 1842	2
82	Passeriformes	Grallariidae	*Hylopezus perspicillatus* (Lawrence, 1861)	34
83	Passeriformes	Formicariidae	*Formicarius nigricapillus* Ridgway, 1893	48
84	Passeriformes	Furnariidae	*Sclerurus obscurior* Sclater,PL, 1857	11
85	Passeriformes	Furnariidae	*Sclerurus guatemalensis* (Hartlaub, 1844)	3
86	Passeriformes	Furnariidae	*Dendrocincla fuliginosa* (Vieillot, 1818)	52
87	Passeriformes	Furnariidae	*Glyphorynchus spirurus* (Vieillot, 1819)	43
88	Passeriformes	Furnariidae	*Dendrocolaptes sanctithomae* (Lafresnaye, 1852)	1

Rank	Order	Family	Scientific name	The number of individual birds observed
89	Passeriformes	Furnariidae	*Xiphorhynchus lachrymosus* (Lawrence, 1862)	31
90	Passeriformes	Furnariidae	*Xiphorhynchus erythropygius* (Sclater, PL, 1860)	1
91	Passeriformes	Furnariidae	*Campylorhamphus trochilirostris* (Lichtenstein, MHK, 1820)	1
92	Passeriformes	Furnariidae	*Automolus ochrolaemus* (Tschudi, 1844)	3
93	Passeriformes	Furnariidae	*Automolus subulatus* Spix, 1824	26
94	Passeriformes	Tyrannidae	*Phyllomyias griseiceps* (Sclater, PL & Salvin, 1871)	1
95	Passeriformes	Tyrannidae	*Tyrannulus elatus* (Latham, 1790)	1
96	Passeriformes	Tyrannidae	*Ornithion brunneicapillus* Lawrence, 1862	2
97	Passeriformes	Tyrannidae	*Zimmerius chrysops* (Sclater, PL, 1859)	1
98	Passeriformes	Tyrannidae	*Mionectes olivaceus* Lawrence, 1868	87
99	Passeriformes	Tyrannidae	*Mionectes oleagineus* (Lichtenstein, 1823)	2
100	Passeriformes	Tyrannidae	*Leptopogon superciliaris* Tschudi, 1844	1
101	Passeriformes	Tyrannidae	*Myiornis atricapillus* (Lawrence, 1875)	1
102	Passeriformes	Tyrannidae	*Lophotriccus pileatus* (Tschudi, 1844)	1
103	Passeriformes	Tyrannidae	*Rhynchocyclus pacificus* (Chapman, 1914)	1
104	Passeriformes	Tyrannidae	*Myiophobus fasciatus* (Statius Muller, 1776)	1
105	Passeriformes	Tyrannidae	*Myiozetetes cayanensis* (Linnaeus, 1766)	1
106	Passeriformes	Tyrannidae	*Myiozetetes similis* (Spix, 1825)	1
107	Passeriformes	Tyrannidae	*Tyrannus melancholicus* Vieillot, 1819	1
108	Passeriformes	Tyrannidae	*Rhytipterna holerythra* (Sclater & Salvin, 1860)	28
109	Passeriformes	Tyrannidae	*Myiarchus tuberculifer* (d'Orbigny & Lafresnaye, 1837)	1
110	Passeriformes	Tyrannidae	*Attila spadiceus* (Gmelin, JF, 1789)	15
111	Passeriformes	Cotingidae	*Querula purpurata* (Statius Muller, 1776)	24

Rank	Order	Family	Scientific name	The number of individual birds observed
112	Passeriformes	Cotingidae	*Cephalopterus penduliger* Sclater, PL, 1859	112
113	Passeriformes	Cotingidae	*Lipaugus unirufus* Sclater, PL, 1860	42
114	Passeriformes	Pipridae	*Cryptopipo holochlora* Sclater,PL, 1888	8
115	Passeriformes	Pipridae	*Lepidothrix coronata* Spix, 1825	159
116	Passeriformes	Pipridae	*Manacus manacus* (Linnaeus, 1766)	13
117	Passeriformes	Pipridae	*Ceratopipra mentalis* Sclater,PL, 1857	141
118	Passeriformes	Tityridae	*Tityra cayana* (Linnaeus, 1766)	1
119	Passeriformes	Tityridae	*Schiffornis veraepacis* (Sclater, PL; Salvin, O 1860)	17
120	Passeriformes	Tityridae	*Laniocera rufescens* (Sclater, PL, 1858)	7
121	Passeriformes	Vireonidae	*Vireolanius leucotis* (Swainson, 1837)	16
122	Passeriformes	Vireonidae	*Pachysylvia decurtata* Bonaparte, 1838	20
123	Passeriformes	Hirundinidae	*Atticora tibialis* Cassin, 1853	1
124	Passeriformes	Troglodytidae	*Microcerculus marginatus* (Sclater, PL, 1855)	90
125	Passeriformes	Troglodytidae	*Troglodytes aedon* Vieillot, 1809	1
126	Passeriformes	Troglodytidae	*Campylorhynchus zonatus* (Lesson, 1832)	2
127	Passeriformes	Troglodytidae	*Pheugopedius mystacalis* Sclater, PL, 1860	15
128	Passeriformes	Troglodytidae	*Cantorchilus leucopogon* Salvadori & Festa, 1899	8
129	Passeriformes	Troglodytidae	*Cantorchilus nigricapillus* Sclater, PL, 1860	22
130	Passeriformes	Troglodytidae	*Henicorhina leucosticta* (Cabanis, 1847)	14
131	Passeriformes	Troglodytidae	*Cyphorhinus phaeocephalus* Sclater, PL, 1860	13
132	Passeriformes	Polioptilidae	*Microbates cinereiventris* (Sclater, PL, 1855)	80
133	Passeriformes	Turdidae	*Turdus obsoletus* Lawrence, 1862	3
134	Passeriformes	Turdidae	*Turdus assimilis* Cabanis, 1851	157

Rank	Order	Family	Scientific name	The number of individual birds observed
135	Passeriformes	Thraupidae	*Tachyphonus luctuosus* d'Orbigny & Lafresnaye, 1837	2
136	Passeriformes	Thraupidae	*Tachyphonus delatrii* Lafresnaye, 1847	237
137	Passeriformes	Thraupidae	*Ramphocelus flammigerus* Jardine & Selby, 1833	4
138	Passeriformes	Thraupidae	*Thraupis episcopus* (Linnaeus, 1766)	6
139	Passeriformes	Thraupidae	*Thraupis palmarum* (Wied, 1821)	14
140	Passeriformes	Thraupidae	*Tangara palmeri* (Hellmayr, 1909)	11
141	Passeriformes	Thraupidae	*Tangara larvata* (Du Bus De Gisignies, 1846)	4
142	Passeriformes	Thraupidae	*Tangara cyanicollis* (d'Orbigny & Lafresnaye, 1837)	1
143	Passeriformes	Thraupidae	*Tangara gyrola* (Linnaeus, 1758)	1
144	Passeriformes	Thraupidae	*Tangara johannae* (Dalmas, 1900)	2
145	Passeriformes	Thraupidae	*Dacnis berlepschi* Hartert, 1900	2
146	Passeriformes	Thraupidae	*Cyanerpes caeruleus* (Linnaeus, 1758)	2
147	Passeriformes	Thraupidae	*Cyanerpes cyaneus* (Linnaeus, 1766)	1
148	Passeriformes	Thraupidae	*Chlorophanes spiza* (Linnaeus, 1758)	2
149	Passeriformes	Thraupidae	*Hemithraupis guira* (Linnaeus, 1766)	3
150	Passeriformes	Thraupidae	*Chrysothlypis salmoni* Sclater, PL, 1886	3
151	Passeriformes	Thraupidae	*Coereba flaveola* (Linnaeus, 1758)	16
152	Passeriformes	Incertae Sedis	*Saltator maximus* (Statius Müller, PL, 1776)	8
153	Passeriformes	Incertae Sedis	*Saltator grossus* (Linnaeus, 1766)	36
154	Passeriformes	Cardinalidae	*Chlorothraupis olivacea* (Cassin, 1860)	73
155	Passeriformes	Parulidae	*Myiothlypis fulvicauda* Spix, 1825	9
156	Passeriformes	Icteridae	*Cacicus uropygialis* Lafresnaye, 1843	16
157	Passeriformes	Fringillidae	*Euphonia saturata* (Cabanis, 1860)	56
158	Passeriformes	Fringillidae	*Euphonia xanthogaster* Sundevall, 1834	34

According to Ridgely and Greenfield (2001), 19 endemic species occur in the Chocó ecoregion: *Crypturellus berlepschi* (Rothschild, 1897), *Penelope ortoni* Salvin, 1874, *Patagioenas goodsoni* (Hartert, E, 1902), *Nyctiphrynus rosenbergi* (Hartert, 1895),

Phaethornis yaruqui (Bourcier, 1851), *Amazilia rosenbergi* (Boucard, 1895), *Trogon comptus* Zimmer, 1948, *Capito quinticolor* Elliot, 1865, *Ramphastos brevis* Meyer de Schauensee, 1945, *Piculus litae* (Rothschild, 1901), *Micrastur plumbeus* Sclater, WL, 1918, *Pyrilia pulchra* Berlepsch, 1897, *Myrmeciza berlepschi* (Hartert, 1898), *Pittasoma rufopileatum* Hartert, 1901, *Rhynchocyclus pacificus* (Chapman, 1914), *Cephalopterus penduliger* Sclater, PL, 1859, *Tanager johannae* (Dalmas, 1900), *Dacnis berlepschi* Hartert, 1900 and *Chlorothraupis olivacea* (Cassin, 1860). According to these authors, two endemic species occur on the western Andean slope, including the high parts of Chocó: *Tangara palmeri* (Hellmayr, 1909) and *Chrysothlypis salmoni* Sclater, PL, 1886. In addition, *Veniliornis callonotus* (Waterhouse, 1841) and *Campephilus gayaquilensis* (Lesson, 1845) are considered endemic to the Tumbes Region.

The national threat categories were obtained from the Red List of Freile et al. (2019). In contrast, the global threat categories were obtained from IUCN (2024).

Amongst the 56 species in the RSVP included in the national Red List, nine are classified as Endangered (EN). Particularly, *Penelope ortoni* (Salvin, 1874) is listed as EN both nationally and globally, *Rhynchortyx cinctus* (Salvin, 1876) and *Capito quinticolor* (Elliot, 1865) are considered EN at the national level, but are classified as Near Threatened (NT) globally. Similarly, *Micrastur plumbeus* (Sclater, 1918), *Cephalopterus penduliger* (Sclater, 1859) and *Dacnis berlepschi* (Hartert, 1900) are considered as Endangered nationally, but classified as Vulnerable (VU) globally. Interestingly, *Amazona autumnalis* (Linnaeus, 1758), *Phaenostictus mcleannani* (Lawrence, 1860) and *Pittasoma rufopileatum* (Hartert, 1901) are only listed as Endangered in the national Red List.

Eleven species are considered Vulnerable (VU) at the local level. These include *Crypturellus berlepschi* (Rothschild, 1897), *Odontophorus erythrops* (Gould, 1859), *Trogon massena* (Gould, 1838), *Campephilus gayaquilensis* (Lesson, 1845), *Pyrilia pulchra* (Berlepsch, 1897), *Myrmeciza berlepschi* (Hartert, 1898), *Hylopezus perspicillatus* (Lawrence, 1861), *Sclerurus guatemalensis* (Hartlaub, 1844) and *Lipaugus unirufus* (Sclater, 1860). Furthermore, *Penelope purpurascens* (Wagler, 1830) and *Cryptoleucopteryx plumbea* (Salvin, 1872) are classified as VU locally, but are considered Near Threatened (NT) globally.

Additionally, 36 species are listed as Near Threatened (NT) at the national level: *Tinamus major* (Gmelin, 1789); *Sarcoramphus papa* (Linnaeus, 1758); *Patagioenas goodsoni* (Hartert, E, 1902); *Megascops guatemalae* Sharpe, 1875; *Nyctiphrynus rosenbergi* (Hartert, 1895); *Androdon aequatorialis* Gould, 1863; *Amazilia rosenbergi* (Boucard, 1895); *Trogon comptus* Zimmer, 1948; *Trogon caligatus* Gould, 1838; *Jacamerops aureus* (Statius Müller, 1776); *Ramphastos ambiguus* Swainson, 1823; *Ramphastos brevis* Meyer de Schauensee, 1945; *Pteroglossus torquatus* Gmelin, JF, 1788; *Piculus litae* (Rothschild, 1901); *Campephilus haematogaster* (Tschudi, 1844); *Amazona farinosa* (Boddaert, 1783); *Dysithamnus puncticeps* Salvin, 1866; *Hafferia zeledoni* Ridgway, 1909; *Hylophylax naevioides* (Lafresnaye, 1847); *Formicarius nigricapillus* Ridgway, 1893; *Dendrocolaptes sanctithomae* (Lafresnaye, 1852); *Xiphorhynchus lachrymosus* (Lawrence, 1862); *Xiphorhynchus erythropygius* (Sclater, PL, 1860); *Rhynchocyclus*

pacificus (Chapman, 1914); *Rhytipterna holerythra* (Sclater & Salvin, 1860); *Ceratopipra mentalis* Sclater, PL, 1857; *Laniocera rufescens* (Sclater, PL, 1858); *Cantorchilus leucopogon* Salvadori & Festa, 1899; *Cyphorhinus phaeocephalus* Sclater, PL, 1860; *Turdus obsoletus* Lawrence, 1862; *Turdus assimilis* Cabanis, 1851; *Tangara palmeri* (Hellmayr, 1909); *Tangara johannae* (Dalmas, 1900); *Chrysothlypis salmoni* Sclater, PL, 1886; *Chlorothraupis olivacea* (Cassin, 1860) and *Spizaetus ornatus* (Daudin, 1800) that is also classified as NT globally.

Elanoides forficatus exhibits boreal migration as well as resident populations according to Ridgely and Greenfield (2001). No other migratory species were recorded.

Taxa included:

Rank	Scientific Name	Common Name
kingdom	Animalia	Animals
class	Aves	Birds
order	Accipitriformes	
order	Apodiformes	
order	Caprimulgiformes	
order	Cathartiformes	
order	Columbiformes	
order	Coraciiformes	
order	Falconiformes	
order	Galbuliformes	
order	Galliformes	
order	Gruiformes	
order	Passeriformes	
order	Piciformes	
order	Psittaciformes	
order	Strigiformes	
order	Tinamiformes	
order	Trogoniformes	
family	Accipitridae	
family	Bucconidae	
family	Capitonidae	
family	Caprimulgidae	

family	Cardinalidae	
family	Cathartidae	
family	Columbidae	
family	Conopophagidae	
family	Cotingidae	
family	Cracidae	
family	Falconidae	
family	Formicariidae	
family	Fringillidae	
family	Furnariidae	
family	Galbulidae	
family	Grallariidae	
family	Hirundinidae	
family	Icteridae	
family	Incertae Sedis	
family	Momotidae	
family	Odontophoridae	
family	Parulidae	
family	Picidae	
family	Pipridae	
family	Polioptilidae	
family	Psittacidae	
family	Rallidae	
family	Ramphastidae	
family	Strigidae	
family	Thamnophilidae	
family	Thraupidae	
family	Tinamidae	
family	Tityridae	
family	Trochilidae	
family	Troglodytidae	

family	Trogonidae	
family	Turdidae	
family	Tyrannidae	
family	Vireonidae	
species	*Accipiter bicolor* (Vieillot, 1817)	
species	*Amazilia rosenbergi* (Boucard, 1895)	
species	*Amazona autumnalis* (Linnaeus, 1758)	
species	*Amazona farinosa* (Boddaert, 1783)	
species	*Androdon aequatorialis* Gould, 1863	
species	*Atticora tibialis* Cassin, 1853	
species	*Attila spadiceus* (Gmelin, JF, 1789)	
species	*Automolus ochrolaemus* (Tschudi, 1844)	
species	*Automolus subulatus* Spix, 1824	
species	*Baryphthengus martii* (Spix, 1824)	
species	*Buteogallus urubitinga* (Gmelin, JF, 1788)	
species	*Cacicus uropygialis* Lafresnaye, 1843	
species	*Campephilus gayaquilensis* (Lesson, 1845)	
species	*Campephilus haematogaster* (Tschudi, 1844)	
species	*Campylorhamphus trochilirostris* (Lichtenstein, MHK, 1820)	
species	*Campylorhynchus zonatus* (Lesson, 1832)	
species	*Cantorchilus leucopogon* Salvadori & Festa, 1899	
species	*Cantorchilus nigricapillus* Sclater, PL, 1860	
species	*Capito quinticolor* Elliot, 1865	
species	*Cephalopterus penduliger* Sclater, PL, 1859	
species	*Ceratopipra mentalis* Sclater,PL, 1857	
species	*Cercomacroides tyrannina* Sclater, PL, 1855	
species	*Chlorestes julie* (Bourcier, 1842)	
species	*Chlorophanes spiza* (Linnaeus, 1758)	
species	*Chlorothraupis olivacea* (Cassin, 1860)	
species	*Chrysothlypis salmoni* Sclater, PL, 1886	
species	*Coereba flaveola* (Linnaeus, 1758)	

species	*Cryptoleucopteryx plumbea* Salvin, 1872	
species	*Cryptopipo holochlora* Sclater,PL, 1888	
species	*Crypturellus berlepschi* (Rothschild, 1897)	
species	*Crypturellus soui* (Hermann, 1783)	
species	*Cyanerpes caeruleus* (Linnaeus, 1758)	
species	*Cyanerpes cyaneus* (Linnaeus, 1766)	
species	*Cyphorhinus phaeocephalus* Sclater, PL, 1860	
species	*Dacnis berlepschi* Hartert, 1900	
species	*Dendrocincla fuliginosa* (Vieillot, 1818)	
species	*Dendrocolaptes sanctithomae* (Lafresnaye, 1852)	
species	*Dryocopus lineatus* (Linnaeus, 1766)	
species	*Dysithamnus puncticeps* Salvin, 1866	
species	*Elanoides forficatus* (Linnaeus, 1758)	
species	*Electron platyrhynchum* (Leadbeater, 1829)	
species	*Epinecrophylla fulviventris* Lawrence, 1862	
species	*Eubucco bourcierii* (Lafresnaye, 1845)	
species	*Euphonia saturata* (Cabanis, 1860)	
species	*Euphonia xanthogaster* Sundevall, 1834	
species	*Eutoxeres aquila* (Bourcier, 1847)	
species	*Formicarius nigricapillus* Ridgway, 1893	
species	*Geotrygon montana* (Linnaeus, 1758)	
species	*Glyphorynchus spirurus* (Vieillot, 1819)	
species	*Grallaria guatimalensis* Prévost & Des Murs, 1842	
species	*Gymnopithys leucaspis* (Sclater, PL, 1855)	
species	*Hafferia zeledoni* Ridgway, 1909	
species	*Harpagus bidentatus* (Latham, 1790)	
species	*Hemithraupis guira* (Linnaeus, 1766)	
species	*Henicorhina leucosticta* (Cabanis, 1847)	
species	*Herpetotheres cachinnans* (Linnaeus, 1758)	
species	*Hylopezus perspicillatus* (Lawrence, 1861)	
species	*Hylophylax naevioides* (Lafresnaye, 1847)	

species	*Jacamerops aureus* (Statius Muller, 1776)	
species	*Laniocera rufescens* (Sclater, PL, 1858)	
species	*Laterallus albigularis* (Lawrence, 1861)	
species	*Lepidothrix coronata* Spix, 1825	
species	*Leptodon cayanensis* (Latham, 1790)	
species	*Leptopogon superciliaris* Tschudi, 1844	
species	*Lipaugus unirufus* Sclater, PL, 1860	
species	*Lophostrix cristata* (Daudin, 1800)	
species	*Lophotriccus pileatus* (Tschudi, 1844)	
species	*Malacoptila panamensis* Lafresnaye, 1847	
species	*Manacus manacus* (Linnaeus, 1766)	
species	*Megascops guatemalae* Sharpe, 1875	
species	*Melanerpes pucherani* (Malherbe, 1849)	
species	*Micrastur plumbeus* Sclater, WL, 1918	
species	*Micrastur ruficollis* (Vieillot, 1817)	
species	*Micrastur semitorquatus* (Vieillot, 1817)	
species	*Microbates cinereiventris* (Sclater, PL, 1855)	
species	*Microcerculus marginatus* (Sclater, PL, 1855)	
species	*Microrhopias quixensis* (Cornalia, 1849)	
species	*Mionectes oleagineus* (Lichtenstein, 1823)	
species	*Mionectes olivaceus* Lawrence, 1868	
species	*Myiarchus tuberculifer* (d'Orbigny & Lafresnaye, 1837)	
species	*Myiophobus fasciatus* (Statius Muller, 1776)	
species	*Myiornis atricapillus* (Lawrence, 1875)	
species	*Myiothlypis fulvicauda* Spix, 1825	
species	*Myiozetetes cayanensis* (Linnaeus, 1766)	
species	*Myiozetetes similis* (Spix, 1825)	
species	*Myrmeciza berlepschi* (Hartert, 1898)	
species	*Myrmeciza exsul* Sclater, PL, 1859	
species	*Myrmotherula axillaris* (Vieillot, 1817)	
species	*Myrmotherula ignota* Griscom, 1929	

species	*Myrmotherula pacifica* Hellmayr, 1911	
species	*Notharchus hyperrhynchus* Sclater, PL, 1856	
species	*Nyctiphrynus rosenbergi* (Hartert, 1895)	
species	*Odontophorus erythrops* Gould, 1859	
species	*Ornithion brunneicapillus* Lawrence, 1862	
species	*Pachysylvia decurtata* Bonaparte, 1838	
species	*Patagioenas goodsoni* (Hartert, E, 1902)	
species	*Patagioenas subvinacea* Lawrence, 1868	
species	*Penelope ortoni* Salvin, 1874	
species	*Penelope purpurascens* Wagler, 1830	
species	*Phaenostictus mcleannani* (Lawrence, 1860)	
species	*Phaethornis guy* (Lesson, 1833)	
species	*Phaethornis yaruqui* (Bourcier, 1851)	
species	*Pheugopedius mystacalis* Sclater, PL, 1860	
species	*Phyllomyias griseiceps* (Sclater, PL & Salvin, 1871)	
species	*Piculus litae* (Rothschild, 1901)	
species	*Pionus chalcopterus* (Fraser, 1841)	
species	*Pionus menstruus* (Linnaeus, 1766)	
species	*Pittasoma rufopileatum* Hartert, 1901	
species	*Pteroglossus torquatus* Gmelin, JF, 1788	
species	*Pulsatrix perspicillata* (Latham, 1790)	
species	*Pyrilia pulchra* Berlepsch, 1897	
species	*Pyrrhura melanura* (Spix, 1824)	
species	*Querula purpurata* (Statius Muller, 1776)	
species	*Ramphastos ambiguus* Swainson, 1823	
species	*Ramphastos brevis* Meyer de Schauensee, 1945	
species	*Ramphocelus flammigerus* Jardine & Selby, 1833	
species	*Rhynchocyclus pacificus* (Chapman, 1914)	
species	*Rhynchortyx cinctus* (Salvin, 1876)	
species	*Rhytipterna holerythra* (Sclater & Salvin, 1860)	
species	*Saltator grossus* (Linnaeus, 1766)	

species	*Saltator maximus* (Statius Müller, PL, 1776)	
species	*Sarcoramphus papa* (Linnaeus, 1758)	
species	*Schiffornis veraepacis* (Sclater, PL; Salvin, O 1860)	
species	*Sclerurus guatemalensis* (Hartlaub, 1844)	
species	*Sclerurus obscurior* Sclater,PL, 1857	
species	*Spizaetus ornatus* (Daudin, 1800)	
species	*Strix nigrolineata* Sclater,PL, 1859	
species	*Strix virgata* Cassin, 1849	
species	*Tachyphonus delatrii* Lafresnaye, 1847	
species	*Tachyphonus luctuosus* d'Orbigny & Lafresnaye, 1837	
species	*Tangara cyanicollis* (d'Orbigny & Lafresnaye, 1837)	
species	*Tangara gyrola* (Linnaeus, 1758)	
species	*Tangara johannae* (Dalmas, 1900)	
species	*Tangara larvata* (Du Bus De Gisignies, 1846)	
species	*Tangara palmeri* (Hellmayr, 1909)	
species	*Thalurania colombica* Bourcier, 1843	
species	*Thraupis episcopus* (Linnaeus, 1766)	
species	*Thraupis palmarum* (Wied, 1821)	
species	*Threnetes ruckeri* (Bourcier, 1847)	
species	*Tinamus major* (Gmelin, 1789)	
species	*Tityra cayana* (Linnaeus, 1766)	
species	*Troglodytes aedon* Vieillot, 1809	
species	*Trogon caligatus* Gould, 1838	
species	*Trogon chionurus* Sclater, PL & Salvin, 1871	
species	*Trogon collaris* Vieillot, 1817	
species	*Trogon comptus* Zimmer, 1948	
species	*Trogon massena* Gould, 1838	
species	*Trogon rufus* Gmelin, 1788	
species	*Turdus assimilis* Cabanis, 1851	
species	*Turdus obsoletus* Lawrence, 1862	
species	*Tyrannulus elatus* (Latham, 1790)	

species	*Tyrannus melancholicus* Vieillot, 1819	
species	*Veniliornis callonotus* (Waterhouse, 1841)	
species	*Veniliornis kirkii* (Malherbe, 1845)	
species	*Vireolanius leucotis* (Swainson, 1837)	
species	*Xiphorhynchus erythropygius* (Sclater, PL, 1860)	
species	*Xiphorhynchus lachrymosus* (Lawrence, 1862)	
species	*Zimmerius chrysops* (Sclater, PL, 1859)	

Usage licence

Usage licence: Creative Commons Public Domain Waiver (CC-Zero)

Data resources

Data package title: Avifauna del Refugio de vida silvestre El Pambilar

Resource link: https://doi.org/10.60545/87dmuq

Alternative identifiers: https://www.gbif.org/es/dataset/7482c011-1692-412d-a87c-220a579ccfd2

Number of data sets: 1

Data set name: Avifauna del Refugio de vida silvestre El Pambilar

Download URL: https://www.gbif.org/es/dataset/7482c011-1692-412d-a87c-220a579ccfd2

Data format: Darwin core Archive

Data format version: 2.1

Description: Our occurrence data include 28 columns and all records are georeferenced (Montalvo et al. 2024).

Column label	Column description
id	Name of the trail where the data were taken.
type	The nature of the presence record, taxon or event.
language	A language of the resource.
licence	A legal document giving official permission to do something with the resource.
basisOfRecord	The specific nature of the data record.

occurrenceID	An identifier for the Occurrence. Record in the dataset or collection.
behaviour	The behaviour shown by the organism at the time of being registered.
eventID	An identifier for the set of information associated with an event (something that occurs at a place and time). It can be a globally unique identifier or a dataset-specific identifier.
eventTime	The time or interval during which the Event occurred. It is recommended to use an encoding scheme.
year	The four-digit year in which the Event occurred, according to the Common Era Calendar.
month	The integer month in which the Event occurred.
day	The integer day of the month on which the Event occurred.
verbatimEventDate	The date or interval during which an Event occurred.
country	The name of the country or *major* administrative unit in which the Location occurs.
countryCode	The standard code for the country in which the Location occurs.
stateProvince	The name of the next smaller administrative region than country (state, province, canton, department, region etc.) in which the Location occurs.
locality	The specific description of the place.
decimalLatitud	The geographic latitude (in decimal degrees, using the spatial reference system given in geodeticDatum) of the geographic centre of a Location. Positive values are north of the Equator, negative values are south of it. Legal values lie between -90 and 90, inclusive.
decimalLongitud	The geographic longitude (in decimal degrees, using the spatial reference system given in geodeticDatum) of the geographic centre of a Location. Positive values are east of the Greenwich Meridian, negative values are west of it. Legal values lie between -180 and 180, inclusive.
taxonID	An identifier for the set of taxon information (data associated with the Taxon class). May be a global unique identifier or an identifier specific to the dataset.
scientificName	An identifier for the nomenclatural (not taxonomic) details of a scientific name.
kingdom	The full scientific name of the kingdom in which the taxon is classified.
phylum	The full scientific name of the phylum or division in which the taxon is classified.
class	The full scientific name of the class in which the taxon is classified.
order	The full scientific name of the order in which the taxon is classified.
family	The full scientific name of the family in which the taxon is classified.
genus	The full scientific name of the genus in which the taxon is classified.
specificEpithet	The name of the first or species epithet of the scientificName.

Acknowledgements

The data were collected through monitoring conducted by the park rangers of the El Pambilar Wildlife Refuge, which is under the jurisdiction of the Ministry of Environment, Water and Ecological Transition of Ecuador. These data are supplemented by information obtained from the project 'Variation of Avifauna along a Precipitation Gradient on the Ecuadorian Coast, funded by the Ordway Laboratory at the Florida Museum of Natural History.

Author contributions

Conceptualisation: Montalvo E. Writing-original draft: Montalvo E. Data curation: Montalvo E. GIS processing: Gallo-Viracocha F. Obtaining field data: Montalvo E. Pianchiche J, Garofalo A, Bonilla J, Montalvo LD. Writing-review and editing: Montalvo E, Montalvo LD.

References

- Bonilla NSU, Valoyes ZC (2020a) Especies de flora endémica del Chocó Biogeográfico - 2011. Instituto de Investigaciones Ambientales del Pacífico John Von Neumann - IIAP. https://www.gbif.org/es/dataset/4d819de6-e850-45d4-9d2e-36885a4b5844#citation. Accessed on: 2024-8-20.
- Bonilla NSU, Valoyes ZC (2020b) Especies de fauna endémica del Chocó Biogeográfico - 2011. Instituto de Investigaciones Ambientales del Pacífico John Von Neumann - IIAP. https://www.gbif.org/es/dataset/8074a87b-7149-4a79-b032-043fd3c411a3#description. Accessed on: 2024-8-29.
- Conservation International (2019) El Chocó ecuatoriano. http://conservation.org.ec/choco-ecuatoriano/. Accessed on: 2024-9-17.
- Freile J, Restall R (2018) Birds of Ecuador. [Aves de Ecuador]. Bloomsbury, Helm, London. [ISBN PB:978-1-4081-0537-7]
- Freile J, Santander T, Carrasco L, Cisneros DFH, Guevara E, Sánchez-Nivicela M, Tinoco BA (2019) Lista roja de las aves del Ecuador. [Red list of birds Ecuador]. Ministerio del Ambiente, Aves y Conservación, Comité Ecuatoriano de Registros Ornitológicos, Fundación Charles Darwin, Universidad del Azuay, Red Aves Ecuador y Universidad San Francisco de Quito, Quito-Ecuador. [ISBN 978-9942-36-389-3]
- IUCN (2024) The IUCN Red List of Threatened Species. https://www.iucnredlist.org/. Accessed on: 2024-9-20.
- Ministerio del Ambiente (2011) Plan de Manejo del Refugio de Vida Silvestre El Pambilar. URL: https://files.goraymi.com/2019/03/01/a5aa941c0cb79061febcaefa9f7505d1.pdf
- Ministerio del Ambiente (2012) Sistema de clasificación de los ecosistemas del Ecuador continental. URL: https://www.ambiente.gob.ec/wp-content/uploads/downloads/2012/09/LEYENDA-ECOSISTEMAS_ECUADOR_2.pdf
- Ministerio del Ambiente (2017) Mapa Interactivo Ambiental. http://ide.ambiente.gob.ec/mapainteractivo/. Accessed on: 2024-9-30.

- Montalvo E, Pianchiche J, Garofalo A, Bonilla J, Gallo-Viracocha F, Montalvo LD (2024) Avifauna del Refugio de vida silvestre El Pambilar. Occurrence dataset. Ministerio del Ambiente, Agua y Transición Ecológica de Ecuador - MAATE. URL: https://doi.org/10.60545/87dmuq
- Palacios WA, Jaramillo N (2016) Árboles amenazados del Chocó ecuatoriano. ACI Avances en Ciencias e Ingenierías URL: https://revistas.usfq.edu.ec/index.php/avances/article/view/508/1953#citations
- Remsen JV, Areta JI, Bonaccorso E, Claramunt S, Lane DF, Robbins MB, Stiles FG, Version KJ (2024) A classification of the bird species of South America. Museum of Natural Science, Louisiana State University URL: http://www.museum.lsu.edu/~Remsen/SACCBaseline.htm
- Ridgely R, Greenfield P (2001) The birds of Ecuador. Vol. 2. Cornell University press, New York. [ISBN 0-8014-8720-X]
- Sierra R, Tirado M, Palacios W (2003) Forest-Cover Change from Labor- and Capital-Intensive Commercial Logging in the Southern Chocó Rainforests. The Professional Geographer URL: https://www.researchgate.net/publication/227928344_Forest-Cover_Change_from_Labor-_and_Capital-Intensive_Commercial_Logging_in_the_Southern_Choco_Rainforests
- Stotz DF, Fitzpatrick JW, Parker TA, Moskovits DK (1996) Neotropical Birds: Ecology and Conservation. University of Chicago Press, Chicago, USA.
- Vázquez M, Freile JF, Suárez L (2005) Biodiversidad en el suroccidente de la provincia de Esmeraldas: un reporte de las evaluaciones ecológicas y socioeconómicas rápidas. EcoCiencia y MAE. URL: https://www.researchgate.net/profile/Karen-Andrade-Mendoza/publication/356082675_Diagnostico_socioeconomico_de_seis_poblaciones_cercanas_al_bosque_humedo_tropical_en_el_suroccidente_de_la_provincia_de_Esmeraldas/links/618b272207be5f31b7622285/Diagnostico-socioeconomico-de-seis-poblaciones-cercanas-al-bosque-humedo-tropical-en-el-suroccidente-de-la-provincia-de-Esmeraldas.pdf
- WWF Colombia (2008) Plan de Acción del Complejo Ecorregional Chocó-Darién. [Action Plan for the Chocó-Darién Ecoregional Complex]. WWF Colombia [ISBN 978-958-8353-04-3]